U7 - Source model definition tool use cases

(D. Petry, 7 Sept. 03)

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Draft of the graphical user interface

1 U7 - Creating a source model from scratch

1.1 High Level Use Case

Actors: Investigator

Goal: Create a source model file x.xml which describes the source positions and spectral parameters for a particular celestial region and can be ingested by the tool A1 or O2.

Triggers: n/a

Description: The user starts the program, interactively places sources and sets theis spectral model parameters also defining which paramters are later to be fitted by A1. The user then saves his input in an XML file.

Reference:

1.2 Expanded Use Case

Preconditions: None.

Successful End: xml file with source model has been successfully saved.

Failed End: Various. E.g. disk full.

Priority: 1

The GUI interface resembles in many ways that of "xfig".

Table 1: **Typical Course of Events**

	Action		**System Response**
1	Select menu item "New model"	2	create new empty model "Untitled"
3	Select menu item "Set ROI"	4	dialog box requests center RA, DEC and radius of ROI, after "OK", display adjusts to the values
5	user selects point source placing tool	6	pointer changes appearance, position is indicated as mouse moves
7	left click in display	8	point source symbol appears, dialog box requests spectrum after "OK", values are stored
9	user selects extended source placing tool	10	pointer changes appearance, position is indicated as mouse moves
11	left click in display	12	extended source symbol appears, now set radius
13	left click in display	14	radius is set, dialog box requests spectrum after "OK", values are stored
15	user selects map source placing tool	16	pointer changes appearance, position is indicated as mouse moves
17	left click in display	18	map source symbol appears, dialog box requests map file and spectrum after "OK", values are stored
19	Select menu item "Save As ..."	20	Dialog box asks for filename after "OK", model is written to xml file

2 U7 - Modifying an existing source model

2.1 High Level Use Case

Actors: Investigator

Goal: Modifying an existing source model file which describes the source positions and spectral parameters for a particular celestial region and can be ingested by the tool A1 or O2.

Triggers: n/a

Description: The user starts the program, loads an existing xml source model file, deletes/adds/moves sources and modfies their spectral parameters interactively. The user then saves the model in an XML file.

Reference:

2.2 Expanded Use Case

Preconditions: An xml source file exists already.

Successful End: xml file with source model has been successfully saved.

Failed End: Various. E.g. disk full.

Priority: 1

The GUI interface resembles in many ways that of "xfig".

Table 2: **Typical Course of Events**

	Action		**System Response**
1	Select menu item "Load model"	2	dialog box requests file name, after "OK", file is loaded and contents displayed, in particular, the display FOV adjusts
3	Select menu item "Set ROI"	4	dialog box requests center RA, DEC and ang. diam. of ROI, after "OK", display adjusts to the values
5	user selects "point source placing" tool	6	pointer changes appearance, position is indicated as mouse moves
7	left click in display	8	point source symbol appears, dialog box requests spectrum, after "OK", values are stored
9	user selects "extended source placing" tool	10	pointer changes appearance, position is indicated as mouse moves
11	left click in display	12	extended source symbol appears, now set radius
13	left click in display	14	radius is set, dialog box requests spectrum after "OK", values are stored
15	user selects "map source placing" tool	16	pointer changes appearance, position is indicated as mouse moves
17	left click in display	18	map source symbol appears, dialog box requests map file and spectrum, after "OK", values are stored and map is displayed
19	select delete tool	20	pointer changes appearance, objects light up as pointer touches
21	left click in display	22	presently lit object is deleted
23	Select menu item "Undo delete"	24	last deleted object is restored
25	user selects "move" tool	26	pointer changes appearance, objects are highlighted when pointer touches
27	left click in display	28	presently highlighted object sticks to pointer and moves with it, the center of the object is at the tip of the pointer
28	left click in display	29	the moving object is set down at the present pointer position, the position information is modified in the internal representation
29	user selects "edit" tool	30	pointer changes appearance, objects are highlighted when pointer touches
31	left click in display	32	a dialog box for the presently highlighted object comes up, the user can see and modify all information pertaining to the source
33	Select menu item "Save"	34	model is written to xml file

3 U7 - Merging two source models

3.1 High Level Use Case

Actors: Investigator

Goal: Merge two existing source model files into one.

Triggers: n/a

Description: The user starts the program, loads an existing xml source model file, loads a second one with the merge option. The two files are then merged into one extending the FOV diameter to cover all sources. The FOV center is kept at the center given for the first model. The user can then save the model in an XML file.

Reference:

3.2 Expanded Use Case

Preconditions: An xml source file exists already.

Successful End: xml file with source model has been successfully saved.

Failed End: Various. E.g. disk full.

Priority: 1

The GUI interface resembles in many ways that of "xfig".

Table 3: **Typical Course of Events**

	Action		**System Response**
1	Select menu item "Load model"	2	dialog box requests file name after "OK", file is loaded and contents displayed, in particular, the display FOV adjusts
3	Select menu item "Merge"	4	dialog box requests file name after "OK", the second file is loaded and merged with the first one, the new ROI is calculated and the display adjusted
5	Select menu item "Save"	6	model is written to xml file

4 U7 - Importing sources from a VOTable catalog

4.1 High Level Use Case

Actors: Investigator

Goal: Import the positional and spectral information from a VOTable catalog

Triggers: n/a

Description: The user starts the program, loads an existing xml source model file or creates a new "untitled" model. The the user selects menu option "Import - VOTable" and gives a file name. The program reads the file, imports the sources which are in the ROI and then goes through them asking the user to complete the missing spectral information if necessary (offering default values). The user can then save the model as usual in an xml file.

Reference:

4.2 Expanded Use Case

Preconditions: VOTable catalog is available, user has loaded or created a source model.

Successful End: xml file with source model has been successfully saved.

Failed End: Various. E.g. disk full.

Priority: 1

The GUI interface resembles in many ways that of "xfig".

Table 4: **Typical Course of Events**

	Action		**System Response**
1	Select menu item "Import - VOTable"	2	dialog box requests file name, after "OK", file is loaded and parsed, only sources inside the ROI are accepted, the accepted sources appear as symbols on the screen, one after the other is highlighted and a dialog box requests missing spectral information until all sources are complete
3	Select menu item "Save"	4	model is written to xml file

5 U7 - Importing sources from a ASCII file

5.1 High Level Use Case

Actors: Investigator

Goal: Import the positional and spectral information from an ASCII file

Triggers: n/a

Description: The user starts the program, loads an existing xml source model file or creates a new "untitled" model. The the user selects menu option "Import - ASCII file" and gives a file name. The program reads the file, imports the sources which are in the ROI and then goes through them asking the user to complete the missing spectral information if necessary (offering default values). The user can then save the model as usual in an xml file.

Reference:

5.2 Expanded Use Case

Preconditions: ASCII file is available, user has loaded or created a source model.

Successful End: xml file with source model has been successfully saved.

Failed End: Various. E.g. disk full.

Priority: 1

The GUI interface resembles in many ways that of "xfig".

Table 5: **Typical Course of Events**

	Action		**System Response**
1	Select menu item "Import - ASCII file"	2	dialog box requests file name, after "OK", file is loaded and parsed, only sources inside the ROI are accepted, the accepted sources appear as symbols on the screen, one after the other is highlighted and a dialog box requests missing spectral information until all sources are complete
3	Select menu item "Save"	4	model is written to xml file

6 U7 - Select projection method

6.1 High Level Use Case

Actors: Investigator

Goal: Change the projection used in the sky display

Triggers: n/a

Description: The user can select which sky projection to use in the sky display by choosing from a menue. Options are (at least) Hammer Aitoff and Tangential. (see e.g. http://simbad.u-strasbg.fr/proj.htx)

Reference:

6.2 Expanded Use Case

Preconditions: User has started the program. model.

Successful End: The new projection mode has been set.

Failed End: Impossible.

Priority: 1

The GUI interface resembles in many ways that of "xfig".

Table 6: **Typical Course of Events**

	Action		**System Response**
1	Select menu item "Aitoff"	2	The display projection method is set to Aitoff and the FOV is redisplayed
3	Select menu item "Tangential"	4	The display projection method is set to Tangential and the FOV is redisplayed.

7 U7 - Zoom and Pan (change display FOV)

7.1 High Level Use Case

Actors: Investigator

Goal: Change the field of view of the sky display of the GUI

Triggers: n/a

Description: After having loaded or created a source model in some way, the user at first can see the whole region of interest (ROI) on the sky display, i.e. the center of the display field of view (FOV) is equal to the center of the ROI and the radius of the FOV is 10 % larger than the radius of the ROI. The user can change the radius and center of the FOV by using eight buttons: Pan left, pan right, pan up, pan down, Center (i.e. back to default), Zoom In, Zoom out, Total ROI (i.e. back to default).

Reference:

7.2 Expanded Use Case

Preconditions: User has loaded or created a source model.

Successful End: The user has adjusted the FOV center and radius to his/her needs.

Failed End: Not possible.

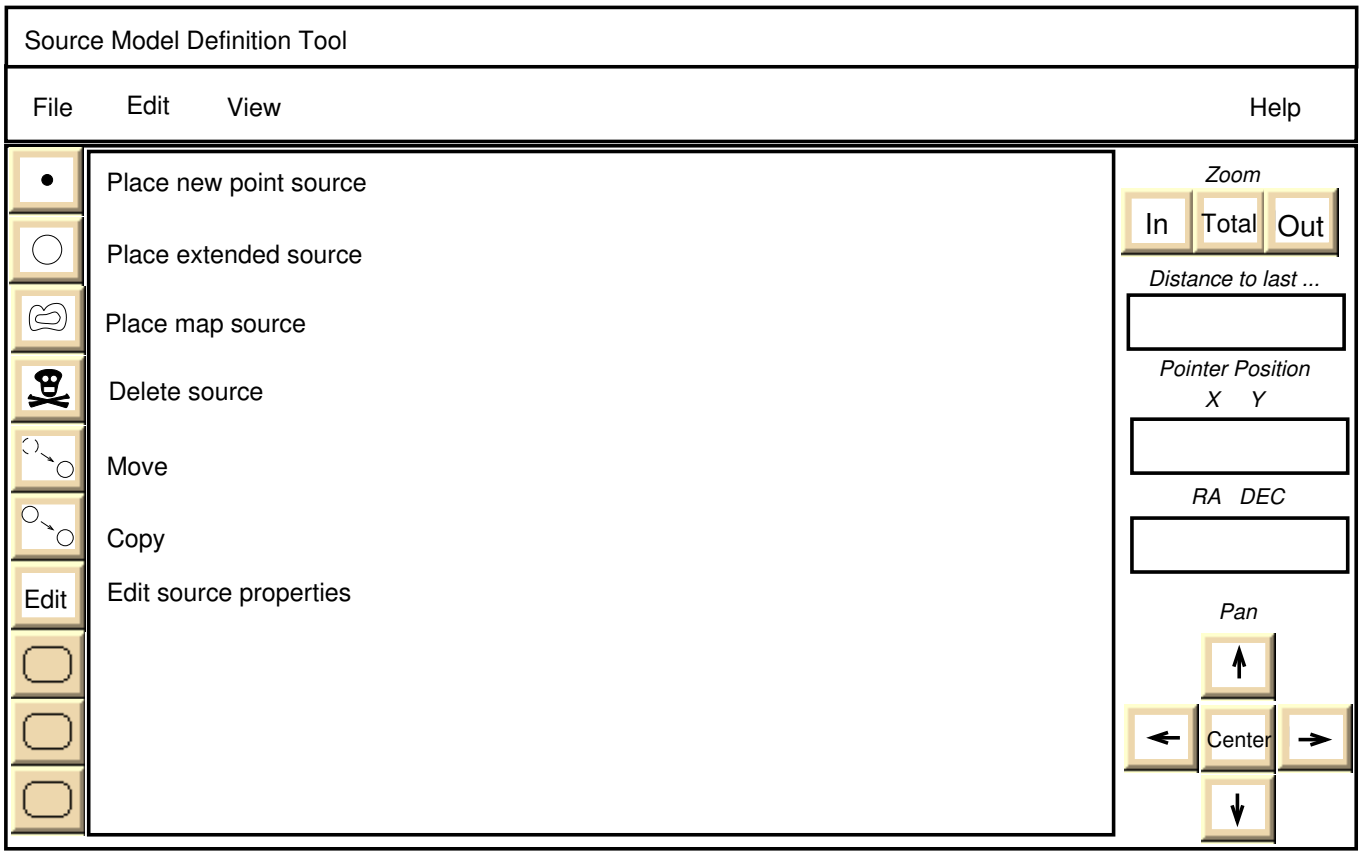
Priority: 1

The GUI interface resembles in many ways that of "xfig".

Table 7: **Typical Course of Events**

	Action		**System Response**
1	Left-click on "pan left"	2	The RA of the FOV center is increased by 10 and the FOV is re-displayed
1	Left-click on "pan right"	2	The RA of the FOV center is decreased by 10 and the FOV is re-displayed
1	Left-click on "pan up"	2	The DEC of the FOV center is increased by 10 and the FOV is re-displayed
1	Left-click on "pan down"	2	The RA of the FOV center is decreased by 10 and the FOV is re-displayed
1	Left-click on "Center"	2	The RA and DEC of the FOV center are set equal to the ROI center and the FOV is re-displayed
1	Left-click on "Zoom in"	2	The FOV radius is decreased by 20 % and the FOV is re-displayed
1	Left-click on "Zoom out"	2	The FOV radius is increased by 20 % and the FOV is re-displayed
1	Left-click on "Total"	2	The radius of the FOV is set to 1.1 times the ROI radius, the RA and DEC of the FOV center are set equal to the ROI center and the FOV is re-displayed

Draft of the graphical user interface



Menus:

File
New Model, Save As..., Save, Load, Merge, Import VOTable, Import ASCII
Edit
Set ROI
View
Tangential, Hammer–Aitoff